

WHAT IS CLAIMED IS:

1. A multiple sample processing apparatus for a continuous flow centrifuge, comprising a plurality of axially aligned processing chambers and expressor chambers, each chamber comprising an axial opening, in a fixed arrangement, and a plurality of central hubs disposed in the axial openings, the central hubs constructed and arranged to define passages for fluid communication between the chambers and a fluid supply.

2. The apparatus according to claim 1, wherein said processing chambers and said expressor chambers are alternately arranged.

3. The apparatus according to claim 1, wherein each said processing chamber is arranged within a corresponding expressor chamber.

4. The apparatus of claim 1, wherein the processing and expressor chambers are constructed and arranged to be flexible and expandable.

5. The apparatus of claim 1, wherein the processing and expressor chambers are constructed and arranged to releasably contact each other at a circumferential portion of the chambers when the expressor chambers are filled with an expressor fluid.

6. The apparatus of claim 5, wherein the central hubs are constructed and arranged to prevent construction of an apparatus having two adjacent processing chambers.

7. The apparatus of claim 6, wherein the central hubs are constructed and arranged to prevent construction of an apparatus having two adjacent expressor chambers.

8. The apparatus of claim 1, wherein the central hubs are constructed and arranged to define multiple passages for fluid communication.

9. The apparatus of claim 8, wherein the central hubs comprise a number of passages for fluid communication that is at least equal to the number of chambers in the apparatus.

- 10. The apparatus of claim 1, further comprising a plurality of weld rings disposed on the central hubs, and constructed and arranged to permit attachment of processing chambers and expressor chambers.
- 11. The apparatus of claim 1, wherein the processing chambers and expressor chambers are substantially the same shape.
- 12. The apparatus of claim 1, wherein the processing chambers are smaller than the expressor chambers.
- 13. The apparatus of claim 11, wherein the processing chambers and expressor chambers are substantially circular.
- 14. The apparatus of claim 13, wherein the processing chambers and expressor chambers have substantially the same diameter.
- 15. The apparatus of claim 12, wherein the processing chambers have a smaller diameter than the expressor chambers.
- 16. The apparatus of claim 1, wherein the processing chambers and expressor chambers are constructed from two sheets of flexible material, the two sheets of material sealed at an outer circumference and an inner circumference, wherein the inner circumference is substantially adjacent the axial opening.
- 17. The apparatus of claim 1, further comprising a terminal central hub disposed at a terminus of the plurality of axially aligned processing chambers and expressor chambers, the terminal central hub constructed and arranged to terminate fluid flow through the central hub fluid passages.
- 18. The apparatus of claim 1, further comprising a fluid entry hub disposed at a fluid entry point of the plurality of axially aligned processing chambers and expressor chambers, the fluid entry hub being constructed and arranged to serve as an interface for fluid communication between the plurality of axially aligned alternating processing chambers and expressor chambers and a fluid pathway external to the continuous

flow centrifuge.

19. The apparatus of claim 18, wherein the fluid pathway is a multi-lumen tube.

20. In a continuous flow centrifuge, the improvement comprising
a plurality of axially aligned processing chambers and expressor chambers,
each chamber comprising an axial opening, in a fixed arrangement, and
disposed in a centrifuge bowl.

21. The continuous flow centrifuge of claim 20, wherein the plurality of axially aligned chambers is disposed to provide a horizontal axis of rotation

22. The continuous flow centrifuge of claim 20, wherein each of the plurality of axially aligned chambers is in separate fluid communication through the axial openings with at least one fluid supply container.

23. A fluid connector (for fluid communication between a fluid supply and a plurality of axially aligned centrifuge chambers), comprising
a multi-lumen disc (disposed in an axial opening of the plurality of axially aligned centrifuge chambers), constructed and arranged for fluid communication with a fluid supply and comprising a number of lumens equal or greater than the plurality of axially aligned centrifuge chambers,
comprising at least one lumen constructed and arranged for fluid communication with each of the plurality of axially aligned chambers, thereby forming a plurality of unique fluid communication passages between each of the plurality of axially aligned chambers and the fluid supply.

24. The fluid connector of claim 23, wherein the circumference of the disc is substantially circular.

25. The fluid connector of claim 23, wherein the multi-lumen disc has a first substantially nonplanar surface that defines a shape complementary with a second substantially

nonplanar surface of another fluid connector.

26. A method for independently and simultaneously processing a plurality of samples in a centrifugal device, comprising

- adding a plurality of samples to a plurality of processing chambers of a multiple processing chamber set,
- centrifuging the plurality of samples,
- optionally expressing a plurality of supernatants, comprising a first portion of the samples formed by the centrifugation of the plurality of samples, and
- optionally expressing a plurality of pellets comprising a second portion of the samples formed by the centrifugation of the plurality of samples.

27. The methods of claims 26, further comprising adding one or more processing fluids to the plurality of samples or pellets.

28. The methods of claim 26, wherein a portion of one or more of the plurality of samples is expressed independently from the remaining samples.

29. The methods of claim 27, wherein a portion of one or more of the plurality of samples is expressed independently from the remaining samples.

30. The methods of claim 26, wherein process fluids are added to one or more of the plurality of samples independently from the remaining samples.

31. The methods of claim 27, wherein process fluids are added to one or more of the plurality of samples independently from the remaining samples.

32. A method for independently and simultaneously processing a plurality of samples in a centrifugal device, the device comprising a multiple sample processing apparatus for a continuous flow centrifuge, including a plurality of axially aligned processing chambers and expressor chambers, each chamber comprising an axial opening, in a

fixed arrangement, and a plurality of central hubs disposed in the axial openings, the central hubs constructed and arranged to define passages for fluid communication between the chambers and a fluid supply, the method comprising:

adding a plurality of samples to the plurality of processing chambers,
centrifuging the plurality of samples,
optionally expressing a plurality of supernatants, comprising a first portion of the samples formed by the centrifugation of the plurality of samples, and
optionally expressing a plurality of pellets comprising a second portion of the samples formed by the centrifugation of the plurality of samples, wherein
the supernatants and the pellets are expressed by filling the expressor bags with an expressor fluid.

33. The method according to claim 32, wherein said expressor fluid comprises a mixture of two fluids.
34. The method according to claim 32, wherein said expressor fluid comprises air.